

## ABSTRACT:

The present invention relates to a digital signal processing apparatus for executing a plurality of operations, comprising a plurality of functional units (10) wherein each functional unit (10) is adapted to execute operations, and control means for controlling said functional units (10), wherein said control means comprises a plurality of control units (12) wherein at least one control unit (12) is operatively associated to any functional unit (10), respectively, for controlling its function, and each functional unit (10) is adapted to execute operations in an autonomous manner under control by the control unit (12) associated thereto, and/or wherein provided is a FIFO (first-in/first-out) register means (14) adapted for supporting data-flow communication among said functional units (10). Further the present invention relates to a method for processing digital signals in digital signal processing apparatus comprising a plurality of functional units (10) wherein each functional unit (10) is adapted to execute operations, and wherein said functional units (10) are controlled by a plurality of control units (12) wherein at least one control unit (12) is operatively associated to any functional unit (10), respectively, so that each functional unit (10) is able to execute operations in an autonomous manner under control by the control unit (12) associated thereto, and/or wherein data-flow communication among said functional units (10) is supported by FIFO (first-in/first-out) register means (14).

(Fig. 9)